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healthy papilla, or stimulation of the peripheral end of the divided glosso-pharyngeus, cause profuse secretion. Eight days after division of the nerve, the exterior of the papilla does not exhibit any important change visible to the naked eye, but stimulation of the peripheral trunk no longer produces secretion. If, however, the surface of the papilla be exposed to strong induction shocks, the glands continue to secrete for a while longer. By the fifth or sixth week no farther secretion takes place. In the case of a rabbit, investigated six months after division of the glosso-pharyngeus, the divided nerve had united, and the papilla experimented upon appeared to execute its functions quite normally. These experiments, Drasch says, "prove that in general, all gustable substances, when brought upon the taste papillae, or near them, induce secretion of the lingual glands, discharging into the furrows and trenches of the papillae. This secretion is due to reflex action, . . . and is brought about chiefly by means of the intra-epithelial plexus of nerves situated above the bulbs." "The glandular secretion serves for the washing away of dissolved gustable substances, and for continuous cleansing of the papillae. The time that elapses between touching the papilla with a gustable substance, and the subsequent secretion, must be such as to allow the substance in solution to penetrate as far as the bulbs. Yet the hypothesis, that over the entire papilla there are scattered fibres (having a free ending) which are capable of tasting is not inadmissible." F. T.

On the Auditory Labyrinth of Orthogoriscus Mola L. D'ARCY W. THOMPSON. Anat. Anzeiger, Jahrg. III, 1888, S. 93-96.

Professor Thompson found the auditory labyrinth of *Orthogoriscus* to differ in some respects from that of all Teleostean fishes. It hangs suspended by webs of delicate connective tissue within a wide space, continuous with the brain-cavity, as in *Chimaera*. A single vertical pillar of cartilage passes down across this space, within the arc of the horizontal canal. In the membranous labyrinth the following parts are distinguishable: latriculus with sinus superior, recessus utriculi, the three semicircular canals with their ampullae, and the sacculus and lagena. Six nerve-endings are visible, three cristae ampullarum, macula recessus utriculi, maculae sacculi and lagenae. The macula neglecta was wanting, and no trace of the ductus endolymphaticus was seen. No true otoliths are present, but instead the maculae are supplied with many small white otoconia, aggregated together. A few of these have a cubical crystalloid form, similar to those of *Acanthias*, but most of them are round or oval, rough on the surface, and concentrically striated within. The proportions of the labyrinth are unusual, the semicircular canals being disproportionately long and the vestibule very small. *Orthogoriscus* differs from all other fishes except *Lophobranchii* in the complete conjunction of utriculus and sacculus, that is, in the absence of any distinction of pars superior and inferior. F. T.

On the Fate of the Muscle-plate, and the Development of the Spinal Nerves and Limb Plexuses in Birds and Mammals. A. M. PATERSON. Quart. Journ. Micr. Sci., Vol. XXVIII, 1887, pp. 109-129, pls. VII and VIII.

The author concludes from an examination of many sections that the spinal nerves are developed from epiblast throughout their entire